

REMARKS

The superfluous word "encapsulated" has been deleted from claims 9 and 17. The opportunity has also been taken to delete the superfluous "to" from the phrase "adjacent to" in both claims.

Claims 21 and 22 have been added to give applicants the full scope of the protection to which they consider themselves entitled. These claims are directed to a display according to claim 9, and a method according to claim 17, respectively, wherein no capsule membrane is present between the electrophoretic contrast media phase and the polymeric matrix; these claims are based upon, *inter alia*, page 4, lines 16-17 of the specification.

No new matter is introduced by the aforementioned amendments.

It is respectfully submitted that the deletion of the word "encapsulated" from claims 9 and 17 must be sufficient to overcome the objection set out in the first paragraph on page 2 of the Office Action.

Claims 9-20 stand rejected under 35 USC 103(a) as being unpatentable over Sheridan, U.S. Patent No. 5,389,945 (hereinafter "Sheridon I"), Sheridan, U.S. Patent No. 4,126,854 (hereinafter "Sheridon II") incorporated by reference, in view of Naoyuki et al., Japanese Published Application (Kokai) 01-086116. (Incidentally, it appears from the Office Action that the Examiner was working solely from the Abstract of Naoyuki. Applicants are in possession of a full translation of this document, and a copy is filed herewith.)

This rejection is traversed. More specifically, this rejection is traversed on the grounds that Naoyuki does not teach that an electrophoretic medium can overcome all the problems which cause Sheridan II to recommend against the use of electrophoretic media, and hence that Sheridan I and II, read together, still teach away from using electrophoretic media in the stylus driven displays of Sheridan I.

Assuming *arguendo* that the skilled person would read Sheridan I, Sheridan II and Naoyuki together, Naoyuki would not overcome all the reasons why

Sheridon II teaches away from the use of electrophoretic media. Sheridan II in fact lists several disadvantages of electrophoretic media:

(a) use of a dyed liquid; the dye tends to be absorbed on (i) the colored particles and (ii) the transparent electrode, diminishing the contrast and appearance of the display (Sheridon II, column 1, lines 27-30);

(b) particle settling over a period of time due to gravity (Sheridon II, column 1, lines 30-31);

(c) particle agglomeration and clumping together over a period of time, and particle adherence to the transparent electrode (Sheridon II, column 1, lines 31-33);

(d) the particles must move substantial distances during display operation, thereby causing the display to operate with relative slowness (Sheridon II, column 1, lines 34-37); and

(e) because D.C. fields are used, it is probable that electro-chemical changes will take place in the display over extended periods of time (Sheridon II, column 1, lines 37-39).

The primary advantage claimed by Naoyuki is actually ease of filling of the capsules, as compared with a prior art system using spacers between substrates; this is hinted at in the "Purpose" section of the Abstract and is described more fully in the paragraph bridging pages 2 and 3 of the enclosed translation. Naoyuki does teach that "coagulation of the electrophoretic particles or adhesion to the electrodes as in devices of the prior art are eliminated and stable display operation is possible" (see page 4 of the enclosed translation, second paragraph under "Effects of the Invention"). In other words, Naoyuki teaches that his encapsulation overcomes problems (b) and (c) above, and perhaps (a)(ii), although *a priori* there is no reason why dye should not absorb on to a capsule wall just as readily, and perhaps more readily, than on to an electrode. However, Naoyuki makes no claim that his encapsulated media overcome problems (a)(i), (d) and (e) above, and hence Naoyuki does not remove the problems which Sheridan II lists as

reasons why rotating bichromal media of the type described in Sheridan I and II are preferred over electrophoretic media.

In this connection, it should be noted that problem (d), slow switching time, would appear to be especially important in the Sheridan I displays, which are intended to allow a user to write notes upon the rotating bichromal member medium in the same way as upon a paper book. As anyone who has ever attempted to use a word processing program on an under-powered computer can attest, it is very difficult to type or write in a situation where display of what is typed or written is delayed. Hence, the slow response time of electrophoretic media cited by Sheridan II is an especially important reason why the skilled person would be taught away from using the Naoyuki electrophoretic medium in the type of display shown in Sheridan I.

For the foregoing reasons, none of the present claims are obvious over Sheridan I and II and Naoyuki.

There are additional reasons why some of the dependent claims are not obvious over this combination of references. Claim 10 is directed to a display according to claim 9 wherein *the substrate* comprises a clear conductive coating. The Office Action states that Sheridan I and II both describe such a coating, drawing attention to Sheridan I, column 2, lines 1-6, Figure 3, item 54, and column 4, lines 65-67, and Sheridan II, Figure 5, items 12 and 40. With respect, none of these passages describe a clear conductive coating on the substrate. Sheridan I, column 2, lines 1-6 state that the *host layer* (34 in Figure 3) is light transparent, as indeed it must be if the color changes produced by rotation of the balls 36 are to be visible to an observer of the display. Column 4, lines 66-68 refers to "an electrically conductive ground plane 54 disposed on the opposite side of the display sheet"; this ground plane 54 is certainly a conductive coating on the substrate, but there is no suggestion in Sheridan I or II that such a conductive coating be clear. Indeed, it is not apparent why Sheridan would take the trouble to provide a clear substrate electrode, since such an electrode would not be visible to an observer, being completely obscured by the opaque black and white balls 36 which lie between the

observer and the substrate. In contrast, it is logical to provide certain embodiments of the present invention with such a clear conductive coating on the substrate, since (as illustrated for example in Figures 2A-2D, the electrophoretic media used in the present invention can operate in a "shutter" mode in which one extreme optical state (Figures 2A and 2C) is essentially transparent, while the other extreme optical state is essentially opaque, and viewing of a filter or reflector 60 positioned on the opposed side of the display from an observer requires that the electrode on the substrate be light transmissive.

For the foregoing reasons, the 35 USC 103(a) rejection of claims 9-20 is unjustified and should be withdrawn.

Claims 21-22 are patentable for the same reasons as claims 9-20, as discussed above. In addition, none of Sheridan I and II and Naoyuki describe the type of display used in claims 21 and 22, in which no capsule membrane is present between the electrophoretic contrast media phase and said polymeric matrix.

Reconsideration and allowance of all claims of this application is respectfully requested.

Albert et al.
Serial No. 10/729,044
Amendment of August 9, 2006
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This application now contains 14 claims, including 2 independent claims, and applicants have already paid fees for 20 total claims, including 3 independent claims. Accordingly, no additional claim fees are required for this Amendment. However, since the prescribed period for responding to the Office Action expired June 29, a Petition for a two month extension of this period is filed herewith. The fee for this Petition is also paid herewith.

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